What is claimed is:

1. A foamed isocyanate-based polymer derived from a reaction mixture comprising an isocyanate, an active hydrogen-containing compound, a phenolic resin and a blowing agent; wherein the phenolic resin is substantially completely free of ether moieties.

2. The foamed isocyanate-based polymer defined in claim 1, wherein the active hydrogen-containing compound is selected from the group comprising polyols, polyamines, polyamides, polyimines and polyolamines.

3. The foamed isocyanate-based polymer defined in claim 1, wherein the active hydrogen-containing compound comprises a polyol.

4. The foamed isocyanate-based polymer defined in claim 3, wherein the polyol comprises a hydroxyl-terminated backbone of a member selected from the group comprising polyether, polyesters, polycarbonate, polydiene and polycaprolactone.

5. The foamed isocyanate-based polymer defined in claim 3, wherein the polyol is selected from the group comprising hydroxyl-terminated polyhydrocarbons, hydroxyl-terminated polyformals, fatty acid triglycerides, hydroxyl-terminated polyesters, hydroxymethyl-terminated polyesters, hydroxymethyl-terminated perfluoromethylenes, polyalkyleneether glycols, polyalkylenearyleneether glycols, polyalkyleneether triols and mixtures thereof.

6. The foamed isocyanate-based polymer defined in claim 3, wherein the polyol is selected from the group comprising adipic acid-ethylene glycol polyester, poly(butylene glycol), poly(propylene glycol) and hydroxyl-terminated polybutadiene.

7. The foamed isocyanate-based polymer defined in claim 3, wherein the polyol is a polyether polyol.

8. The foamed isocyanate-based polymer defined in claim 7, wherein the polyether polyol has a molecular weight in the range of from about 200 to about 10,000.

9. The foamed isocyanate-based polymer defined in claim 7, wherein the polyether polyol has a molecular weight in the range of from about 2000 to about 7,000.

10. The foamed isocyanate-based polymer defined in claim 7, wherein the polyether polyol has a molecular weight in the range of from about 2,000 to about 6,000.

11. The foamed isocyanate-based polymer defined in claim 1, wherein the active hydrogen-containing compound is selected from group comprising a polyamine and a polyalkanolamine.

12. The foamed isocyanate-based polymer defined in 11, wherein the polyamine is selected from the group comprising primary and secondary amine terminated polyethers.

13. The foamed isocyanate-based polymer defined in claim 12, wherein the polyether has a molecular weight of greater than about 230.

14. The foamed isocyanate-based polymer defined in claim 12, wherein the polyether has a functionality of from about 2 to about 6.

15. The foamed isocyanate-based polymer defined in claim 12, wherein the polyether has a molecular weight of greater than about 230 and a functionality of from about 1 to about 3.

16. The foamed isocyanate-based polymer defined in any one of claims 1-15, wherein the isocyanate is represented by the general formula:

$$Q(NCO)_i$$

wherein i is an integer of two or more and Q is an organic radical having the valence of i.

17. The foamed isocyanate-based polymer defined in any one of claims 1-15, wherein the isocyanate is selected from the group comprising hexamethylene diisocyanate, 1,8-diisocyanato-p-methane, xylyl diisocyanate, $(OCNCH_2CH_2CH_2OCH_2O)_2$, 1-methyl-2,4-diisocyanatocyclohexane, phenylene diisocyanates, tolylene diisocyanates, chlorophenylene diisocyanates, diphenylmethane-4,4'-diisocyanate, naphthalene-1,5-diisocyanate, triphenylmethane-4,4',4''-triisocyanate, isopropylbenzene-alpha-4-diisocyanate and mixtures thereof.

18. The foamed isocyanate-based polymer defined in any one of claims 1-15, wherein the isocyanate comprises a prepolymer.

19. The foamed isocyanate-based polymer defined in any one of claims 1-15, wherein isocyanate is selected from the group comprising 1,6-hexamethylene diisocyanate, 1,4-butylene diisocyanate, furfurylidene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 2,4'-diphenylmethane diisocyanate, 4,4'-diphenylmethane diisocyanate, 4,4'-diphenylpropane diisocyanate, 4,4'-diphenyl-3,3'-dimethyl methane diisocyanate, 1,5-naphthalene diisocyanate, 1-methyl-2,4-diisocyanate-5-chlorobenzene, 2,4-diisocyanato-s-triazine, 1-methyl-2,4-diisocyanato cyclohexane, p-phenylene diisocyanate, m-phenylene diisocyanate, 1,4-naphthalene diisocyanate, dianisidine diisocyanate, bitolylene diisocyanate, 1,4-xylylene diisocyanate, 1,3-xylylene diisocyanate, bis-(4-isocyanatophenyl)methane, bis-(3-methyl-4-isocyanatophenyl)methane, polymethylene polyphenyl polyisocyanates and mixtures thereof.

20. The foamed isocyanate-based polymer defined in any one of claims 1-15, wherein the isocyanate is selected from the group comprising 2,4-toluene diisocyanate, 2,6-toluene diisocyanate and mixtures thereof.

21. The foamed isocyanate-based polymer defined in any one of claims 1-15, wherein the isocyanate is selected from the group consisting essentially of (i) 2,4'-diphenylmethane diisocyanate, 4,4'-diphenylmethane diisocyanate and mixtures thereof;

and (ii) mixtures of (i) with an isocyanate selected from the group comprising 2,4-toluene diisocyanate, 2,6-toluene diisocyanate and mixtures thereof.

22. The foamed isocyanate-based polymer defined in any one of claims 1-22, wherein the blowing agent comprises water.

23. The foamed isocyanate-based polymer defined in claim 22, wherein the reaction mixture comprises water in an amount in the range of from about 0.5 to about 40 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

24. The foamed isocyanate-based polymer defined in claim 22, wherein the reaction mixture comprises water in an amount in the range of from about 1.0 to about 10 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

25. The foamed isocyanate-based polymer defined in any one of claims 1-24, wherein the reaction mixture comprises phenolic resin in an amount of up to about 20 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

26. The foamed isocyanate-based polymer defined in any one of claims 1-24, wherein the reaction mixture comprises phenolic resin in an amount in the range of from about 1.0 to about 15 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

27. The foamed isocyanate-based polymer defined in any one of claims 1-24, wherein the reaction mixture comprises phenolic resin in an amount in the range of from about 1.0 to about 10 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

28. The foamed isocyanate-based polymer defined in any one of claims 1-24, wherein the reaction mixture comprises phenolic resin in an amount in the range of from about 2.0 to about 20 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

29. The foamed isocyanate-based polymer defined in any one of claims 1-28, wherein the phenolic resin comprises a molecular weight in the range of from about 200 to about 3000.

30. The foamed isocyanate-based polymer defined in any one of claims 1-29, wherein the phenolic resin comprises a melting point in the range of from about 50°C to about 150°C.

31. The foamed isocyanate-based polymer defined in any one of claims 1-29, wherein the phenolic resin comprises a melting point in the range of from about 75°C to about 100°C.

32. The foamed isocyanate-based polymer defined in any one of claims 1-31, wherein the phenolic resin comprises a functionality in the range of from about 2 to about 8.

33. The foamed isocyanate-based polymer defined in any one of claims 1-32, wherein the phenolic resin comprises less than about 0.05 % by weight phenol.

34. The foamed isocyanate-based polymer defined in any one of claims 1-32, wherein the phenolic resin comprises less than about 0.05 % by weight formaldehyde.

35. The foamed isocyanate-based polymer defined in any one of claims 1-32, wherein the phenolic resin comprises less than about 0.05 % by weight phenol and formaldehyde.

36. A molded foam comprising the foamed isocyanate-based polymer defined in any one of claims 1-35.

37. A slab foam comprising the foamed isocyanate-based polymer defined in any one of claims 1-35.

38. A process for producing a foamed isocyanate-based polymer comprising the steps of:

contacting an isocyanate, an active hydrogen-containing compound, a phenolic resin and a blowing agent to form a reaction mixture; and

expanding the reaction mixture to produce the foamed isocyanate-based polymer;

wherein the phenolic resin is substantially completely free of ether moieties.

39. The process defined in claim 38, wherein the active hydrogen-containing compound is selected from the group comprising polyols, polyamines, polyamides, polyimines and polyolamines.

40. The process defined in claim 38, wherein the active hydrogen-containing compound comprises a polyol.

41. The process defined in claim 40, wherein the polyol comprises a hydroxyl-terminated backbone of a member selected from the group comprising polyether, polyesters, polycarbonate, polydiene and polycaprolactone.

42. The process defined in claim 40, wherein the polyol is selected from the group comprising hydroxyl-terminated polyhydrocarbons, hydroxyl-terminated polyformals, fatty acid triglycerides, hydroxyl-terminated polyesters, hydroxymethyl-terminated polyesters, hydroxymethyl-terminated perfluoromethylenes, polyalkyleneether glycols, polyalkylenearyleneether glycols, polyalkyleneether triols and mixtures thereof.

43. The process defined in claim 40, wherein the polyol is selected from the group comprising adipic acid-ethylene glycol polyester, poly(butylene glycol), poly(propylene glycol) and hydroxyl-terminated polybutadiene.

44. The process defined in claim 40, wherein the polyol is a polyether polyol.

45. The process defined in claim 44, wherein the polyether polyol has a molecular weight in the range of from about 200 to about 10,000.

46. The process defined in claim 44, wherein the polyether polyol has a molecular weight in the range of from about 2000 to about 7,000.

47. The process defined in claim 44, wherein the polyether polyol has a molecular weight in the range of from about 2,000 to about 6,000.

48. The process defined in claim 38, wherein the active hydrogen-containing compound is selected from group comprising a polyamine and a polyalkanolamine.

49. The process defined in 48, wherein the polyamine is selected from the group comprising primary and secondary amine terminated polyethers.

50. The process defined in claim 49, wherein the polyether has a molecular weight of greater than about 230.

51. The process defined in claim 49, wherein the polyether has a functionality of from about 2 to about 6.

52. The process defined in claim 49, wherein the polyether has a molecular weight of greater than about 230 and a functionality of from about 1 to about 3.

53. The process defined in any one of claims 38-52, wherein the isocyanate is represented by the general formula:

$$Q(NCO)_i$$

wherein i is an integer of two or more and Q is an organic radical having the valence of i.

54. The process defined in any one of claims 38-52, wherein the isocyanate is selected from the group comprising hexamethylene diisocyanate, 1,8-diisocyanato-p-

methane, xylyl diisocyanate, $(OCNCH_2CH_2CH_2OCH_2O)_2$, 1-methyl-2,4-diisocyanatocyclohexane, phenylene diisocyanates, tolylene diisocyanates, chlorophenylene diisocyanates, diphenylmethane-4,4′-diisocyanate, naphthalene-1,5-diisocyanate, triphenylmethane-4,4′,4″-triisocyanate, isopropylbenzene-alpha-4-diisocyanate and mixtures thereof.

55. The process defined in any one of claims 38-52, wherein the isocyanate comprises a prepolymer.

56. The process defined in any one of claims 38-52, wherein isocyanate is selected from the group comprising 1,6-hexamethylene diisocyanate, 1,4-butylene diisocyanate, furfurylidene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 2,4′-diphenylmethane diisocyanate, 4,4′-diphenylmethane diisocyanate, 4,4′-diphenylpropane diisocyanate, 4,4′-diphenyl-3,3′-dimethyl methane diisocyanate, 1,5-naphthalene diisocyanate, 1-methyl-2,4-diisocyanate-5-chlorobenzene, 2,4-diisocyanato-s-triazine, 1-methyl-2,4-diisocyanato cyclohexane, p-phenylene diisocyanate, m-phenylene diisocyanate, 1,4-naphthalene diisocyanate, dianisidine diisocyanate, bitolylene diisocyanate, 1,4-xylylene diisocyanate, 1,3-xylylene diisocyanate, bis-(4-isocyanatophenyl)methane, bis-(3-methyl-4-isocyanatophenyl)methane, polymethylene polyphenyl polyisocyanates and mixtures thereof.

57. The process defined in any one of claims 38-52, wherein the isocyanate is selected from the group comprising 2,4-toluene diisocyanate, 2,6-toluene diisocyanate and mixtures thereof.

58. The process defined in any one of claims 38-52, wherein the isocyanate is selected from the group consisting essentially of (i) 2,4′-diphenylmethane diisocyanate, 4,4′-diphenylmethane diisocyanate and mixtures thereof; and (ii) mixtures of (i) with an isocyanate selected from the group comprising 2,4-toluene diisocyanate, 2,6-toluene diisocyanate and mixtures thereof.

59. The process defined in any one of claims 38-58, wherein the blowing agent comprises water.

60. The process defined in claim 59, wherein the reaction mixture comprises water in an amount in the range of from about 0.5 to about 40 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

61. The process defined in claim 59, wherein the reaction mixture comprises water in an amount in the range of from about 1.0 to about 10 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

62. The process defined in any one of claims 38-61, wherein the reaction mixture comprises phenolic resin in an amount of up to about 20 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

63. The process defined in any one of claims 38-61, wherein the reaction mixture comprises phenolic resin in an amount in the range of from about 1.0 to about 15 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

64. The process defined in any one of claims 38-61, wherein the reaction mixture comprises phenolic resin in an amount in the range of from about 1.0 to about 10 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

65. The process defined in any one of claims 38-61, wherein the reaction mixture comprises phenolic resin in an amount in the range of from about 2.0 to about 20 parts by weight per 100 parts by weight of active hydrogen-containing compound used in the reaction mixture.

66. The process defined in any one of claims 38-65, wherein the phenolic resin comprises a molecular weight in the range of from about 200 to about 3000.

67. The process defined in any one of claims 38-65, wherein the phenolic resin comprises a melting point in the range of from about 50°C to about 150°C.

68. The process defined in any one of claims 38-65, wherein the phenolic resin comprises a melting point in the range of from about 75°C to about 100°C.

69. The process defined in any one of claims 38-68, wherein the phenolic resin comprises a functionality in the range of from about 2 to about 8.

70. The process defined in any one of claims 38-69, wherein the phenolic resin comprises less than about 0.05 % by weight phenol.

71. The process defined in any one of claims 38-69, wherein the phenolic resin comprises less than about 0.05 % by weight formaldehyde.

72. The process defined in any one of claims 38-69, wherein the phenolic resin comprises less than about 0.05 % by weight phenol and formaldehyde.

73. A foamed isocyanate-based polymer derived from a reaction mixture comprising an isocyanate, an active hydrogen-containing compound, a phenolic resin substantially completely free of ether moieties and a blowing agent; the foamed isocyanate-based polymer having an Indentation Force Deflection loss when measured pursuant to ASTM D3574 which is less than that of a reference foam produced by substituting a copolymer polyol for the phenolic resin in the reaction mixture, the foamed isocyanate-based polymer and the reference foam having substantially the same density and Indentation Force Deflection when measured pursuant to ASTM D3574 (50 $in^2$ indentor; 15" x 15" x 4" sample size; 25°C, 50% relative humidity).

74. A foamed isocyanate-based polymer derived from a reaction mixture comprising an isocyanate, an active hydrogen-containing compound, a phenolic resin substantially completely free of ether moieties and a blowing agent; the foamed isocyanate-based polymer having thickness loss when measured pursuant to ASTM D3574 which is less

than that of a reference foam produced by substituting a copolymer polyol for the phenolic resin in the reaction mixture, the foamed isocyanate-based polymer and the reference foam having substantially the same density and Indentation Force Deflection when measured pursuant to ASTM D3574.

75. A liquid mixture comprising an active hydrogen-containing compound and a phenolic resin substantially completely free of ether moieties.

76. A method of conferring a load bearing property to an isocyanate-based polymer foam comprising the step of incorporating a phenolic resin substantially completely free of ether moieties in a formulation used to produce the foam.

77. A method of conferring an energy absorbing property to an isocyanate-based polymer foam comprising the step of incorporating a phenolic resin substantially completely free of ether moieties in a formulation used to produce the foam.